

We Claim:

1. A method of forming a molded article from a solid raw material, the method comprising:

feeding a solid pressure-fusible raw material into an injection zone from a material

5 hopper;

pressing the raw material from the injection zone into a compression chamber having a shaped volume using a reciprocating press piston; and

increasing the pressure on the raw material in the compression chamber until the pressure-fusible raw material forms a solid filling the shaped volume of the compression

10 chamber.

2. The method of claim 1, further comprising feeding the solid pressure-fusible raw material from a hopper into the injection zone.

15 3. The method of claim 2, wherein feeding the solid pressure-fusible raw material from the hopper into the injection zone includes using a plunger to index the raw material through the hopper.

4. The method of claim 1, wherein the compression chamber is formed by a  
20 placing a removable mold within a mold chamber, wherein a wall of the mold chamber forms one boundary of the compression chamber and a cavity within the removable mold defines the remaining boundary of the compression chamber.

5. The method of claim 1, wherein the removable mold is secured adjacent the injection zone by a lock mechanism.

5 6. The method of claim 4, wherein the lock mechanism includes a cam structure and a lock handle for manually locking the compression chamber in place.

7. An isostatic press comprising:  
an injection zone configured to receive a pressure-fusible raw material;  
10 a compression chamber configured to receive pressure-fusible raw material from the injection zone and configured to receive isostatic pressure applied to raw material therein to form a solid object of the pressure-fusible raw material shaped the same as the compression chamber; and  
a pressing piston positioned to travel through the injection zone for transporting  
15 the pressure-fusible raw material from the injection zone into a compression chamber and configured to apply isostatic pressure to the compression chamber.

8. The isostatic press of claim 7, further comprising:  
a mold chamber configured to receive releasable molds;  
20 at least one releasable mold; and  
a lock mechanism configured to selectively lock the at least one releasable mold in a position adjacent the injection zone.

9. The isostatic press of claim 8, wherein the mold chamber includes a mold wall configured to form a first boundary of the compression chamber.

5 10. The isostatic press of claim 9, wherein the at least one releasable mold includes a mold cavity configured to form a second boundary of the compression chamber.

11. The isostatic press of claim 8, wherein the mold chamber includes a mold wall configured to form a first boundary of the compression chamber and the at least one  
10 releasable mold includes a mold cavity configured to form a second boundary of the compression chamber.

12. The isostatic press of claim 7, further comprising:  
15 a pressure-fusible raw material hopper configured to receive pressure-fusible raw material; and

a press handle operatively coupled with the pressing piston to effect reciprocal motion of the pressing piston by manipulation of the press handle.

20 13. The isostatic press of claim 12, further comprising a plunger configured to index pressure-fusible raw material down through the hopper.